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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/510,376	08/01/2005	Henk Schaake	DEHN-01004US0	8799
28554 7590 10/31/2007 VIERRA MAGEN MARCUS & DENIRO LLP 575 MARKET STREET SUITE 2500 SAN FRANCISCO, CA 94105			EXAMINER ANDERSON, GUY G	
			ART UNIT 2883	PAPER NUMBER
			MAIL DATE 10/31/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/510,376

Applicant(s)

SCHAAKE, HENK

Examiner

Guy G. Anderson

Art Unit

2883

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 69-88, 108-115, 118 and 119 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 69-88, 108-115, 118 and 119 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date See Continuation Sheet.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

Continuation of Attachment(s) 3. Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :1/18/2005 & 4/11/2005 & 7/30/2006.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

- 1.1 The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless—

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

- 1.2 Claim 69 is rejected under 35 U.S.C 102(b) as being unpatentable over US-4691101 to Leonard.

In regards to claim 69, Leonard discloses an optical positional; encoder comprising/wherein:

69) one or more light sources; and a plurality of light detectors or light transmitting means, wherein light from one light source is concentrated towards two or more of the light detectors or light transmitting means. [Fig. 5a, #13, #7a-d, Abstract]

- 1.3 Claims 71-72, 74 are rejected under 35 U.S.C 102(b) as being unpatentable over US-4691101 to Leonard.

In regards to claims 71-72 and 74, Leonard discloses all of the limitations in the claims.

71) light transmitting means and wherein the light transmitting means can transmit the optical output of the control to a light detector or detectors that is or are spaced apart from the optical control.

72) control provides an optical output indicative of the state or position of the control, wherein the control comprises light transmitting means and wherein the optical output can be transmitted by the light transmitting means to another remote component for subsequent processing.

74) the control comprises light transmitting means and wherein the light transmitting means act to redirect the light from the optical control or controls such that it will propagate in free air towards a remote component or light detector or detectors.

- 1.4 Claim 69 is rejected under 35 U.S.C 102(b) as being unpatentable over US-5956661 to Lefebvre.

In regards to claim 69, Lefebvre discloses an optical positional; encoder comprising/wherein:

69) one or more light sources; and a plurality of light detectors or light transmitting means, wherein light from one light source is concentrated towards two or more of the light detectors or light transmitting means. [Fig. 2-3, #114,144,147, Col.7-8, lines 45-67 and 1-67.]

- 1.5 Claim 70 is rejected under 35 U.S.C 102(b) as being unpatentable over US-5956661 to Lefebvre.

In regards to claim 70, Lefebvre discloses an optical positional; encoder comprising/wherein:

70) one or more reflectors arranged to reflect light from the light source or sources to redirect that light and concentrate that light towards one or more locations. [Fig. 2-3, #114,144,147, Col.7-8, lines 45-67 and 1-67.]

- 1.6 Claim 73 is rejected under 35 U.S.C 102(b) as being unpatentable over US-5956661 to Lefebvre.

In regards to claim 73, Lefebvre discloses an optical positional; encoder comprising/wherein:

73) the control comprises light transmitting means comprising optical fibres. [Col. 11, lines 10-20.]

- 1.7 Claim 75 is rejected under 35 U.S.C 102(b) as being unpatentable over US-5956661 to Lefebvre.

In regards to claim 75, Lefebvre discloses an optical positional; encoder comprising/wherein:

75) transmitting means comprise short lengths of light transmissive material that can accept light from the optical control at one end and emit it at their other end and are shaped so as to be able to redirect the light towards a remote component or detector or detectors. [Col. 11, lines 10-20.]

***Claim Rejections - 35 USC § 102***

- 2.1 The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

*A person shall be entitled to a patent unless—*

*(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.*

- 2.2 Claim 69 is rejected under 35 U.S.C 102(b) as being unpatentable over US-6653619 to Chin.

In regards to claim 69, Chin discloses an optical positional; encoder comprising/wherein:

69) one or more light sources; and a plurality of light detectors or light transmitting means, wherein light from one light source is concentrated towards two or more of the light detectors or light transmitting means. [Abstract, Fig.1-2, #3,4,5,8, Col. 1, lines 65-67, Col. 3-4, lines 25-67 and 1-60.]

- 2.3 Claim 78-79, 81 and 83 are rejected under 35 U.S.C 102(b) as being unpatentable over US-6653619 to Chin.

In regards to claim 78-79, 81 and 83, Chin discloses an optical positional; encoder comprising/wherein:

78) a reflector or reflectors that concentrate the light from the light source or sources towards two or more of the light detectors or light transmitting means and that have a substantially parabolic shape. [Abstract, Fig.1-2, #3,4,5,8, Col. 1, lines 65-67, Col. 3-4, lines 25-67 and 1-60.]

79) a reflector or reflector arranged to reflect light from a single point sources towards plural different location. [Abstract, Fig.1-2, #3,4,5,8, Col. 1, lines 65-67, Col. 3-4, lines 25-67 and 1-60.]

81) a reflector or reflectors arranged to redirect the light such that it generally returns towards the light source. [Abstract, Fig.1-2, #3,4,5,8, Col. 1, lines 65-67, Col. 3-4, lines 25-67 and 1-60.]

83) the light sources and light detectors or light transmitting means are arranged on the same surface. [Abstract, Fig.1-2, #3,4,5,8, Col. 1, lines 65-67, Col. 3-4, lines 25-67 and 1-60.]

### Claim Rejections - 35 USC § 103

- 3.1 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

- 3.2 Claims 76-77, 80, 82, 84-88, 108-115, 118-119 are rejected under 35 U.S.C. 103(a) as being unpatentable over 6653619 to Chin.

Regarding claims 76-77, 80, 82, 84-88, 108-115, 118-119, Chin does not specifically disclose the limitations in each of the listed claims.

However, the limitations listed would have been obvious to one of ordinary skill in the art at the time of invention.

80) first and second reflective surfaces arranged such that the first reflective surface diverts light from a light source toward the second reflective surface which then directs and concentrates the light towards one or more locations.

82) one or more light directing means arranged to redirect and concentrate the light from the light source or sources such that it is concentrated in a direction back towards the light source or sources but laterally spaced therefrom.

84.) The optical control of claim 69, further comprising a cover element having apertures in it arranged in the path of a concentrated light beam or beams.

85.) The optical control of claim 69, further comprising a cover element formed with one or more apertures; wherein the cover element is arranged such that light from a light source passes through an aperture in the cover element.

86.) The optical control of claim 84, wherein the cover element is arranged over the light detectors or light transmitting means with its apertures positioned such that light from a light source must pass through an aperture in the cover element to reach the light detectors or light transmitting means.

87.) The optical control of claim 69, further comprising a housing that can carry and cover one or more of the components of the control.

88.) The optical control of claim 87, wherein the housing is arranged to cover the optical control and to extend a uniform height above a substrate on which the control and housing is to be mounted.

108.) An optical control system comprising a plurality of optical controls one or more of said optical controls being in accordance with claim 69, wherein the optical controls each provide an optical output indicative of the state of the control; the system further comprising light transmitting means to transmit the optical outputs of the controls to a processing unit capable of reading the optical data generated by the controls.

109.) The optical control system of claim 108, further comprising a common detector or set of detectors that is shared by plural optical controls.

110.) An optical control system, comprising: a plurality of optical controls mounted on a substrate one or more of said optical controls being in accordance



with claim 69, each optical control comprising one or more light redirecting means for directing its optical output to travel through free space to a remote detector or detectors that is or are common to the plurality of optical controls.

111.) The optical control system of claim 110, wherein the equivalent or corresponding outputs of each optical control are transmitted to the same detector.

112.) The optical control system of claim 110, wherein the detectors are mounted so as to be outside of and surrounding the optical controls that they service.

113.) The optical control system of claim 110, further comprising means for polling each control in turn to read its output.

114.) A control panel comprising a control panel printed circuit board and one or more optical controls one or more of said optical controls being in accordance with claim 69, the optical controls including light sources and light detectors, and light sources and light detectors of the controls being mounted directly on the control panel printed circuit board.

115.) A method of constructing an optical control or controls, comprising mounting the light sources and light detectors of one or more optical controls on a printed circuit board one or more of said optical controls being in accordance with claim 69, and attaching a housing and/or other mechanical components of the control or controls to the printed circuit board.

118.) A kit for an optical control in accordance with claim 69, comprising: a housing; a movable control member mounted or mountable in the housing; and one or more reflectors for location in the housing.

119.) A kit of parts for constructing an optical control in accordance with claim 69.

These limitations involve only routine skill in the art since it is well known that duplication of essential working parts of a device, rearranging parts of an invention, determining the optimum range and values of a device, utilizing a preferred material based upon design

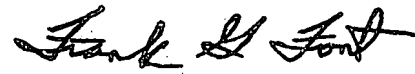
choice, and making parts integral are all within the routine skill of a PHOSITA at the time of invention.

*Conclusion*

- 4.1 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guy G. Anderson whose telephone number is 571.272.8045. The examiner can normally be reached on Tuesday-Saturday 0900-2200.
- 4.2 If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on 571.272.2415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.
- Information regarding the status of an application may be obtained from the Patent.
- 4.3 Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.
- 4.4 Date and signature of assistant examiner.



October 28, 2007



Frank G. Font  
Supervisory Patent Examiner  
Technology Center 2800